multiple opportunities for key stakeholders to participate. The public involvement plan for the study was initiated to support the MTA and the technical teams in building consensus for North County Corridors Plan.

To maximize coverage and public participation in the process, the public outreach program also used a variety of communications strategies, information materials, stakeholder meetings, and public open houses to inform the public about the North County Combined Highway Corridors Study.

One-on-One Stakeholder Interviews

The project team conducted approximately 50 interviews with a broad cross section of North County stakeholders including elected officials, technical agencies, and business groups that reflected a broadly representative group of key opinion leaders. These one-on-one stakeholder interviews helped refine the study's purpose and need, and launched the outreach process. The stakeholders identified their transportation priorities as well as short- and long-term transportation issues to be considered. Potential interviewees were identified by the project team and approved by the TAC.

Focus Group

A focus group was conducted at the first screening milestone to ensure feedback from the commuter population was included in the scoping process. Focus group participants were recruited based on their commute patterns.

Public Open House Meetings

Five rounds of open house meetings (11 meetings in total) were held in the Antelope and Santa Clarita Valleys during the course of the study, typically at the Palmdale Cultural Center and the Santa Clarita City Hall. These open house meetings coincided with key project milestones including study kickoff; presentation of the study purpose, need, and objectives; display of the alternatives; presentation of the locally preferred strategies (LPSs); and finally the integrated North County Corridor Plan. Each series of open houses was publicized via meeting notices/newsletters mailed to the project database of approximately 2,500 and distributed in public buildings, press releases distributed to the local print and broadcast media, and advertisements placed in local print media outlets and on Metro, city, and local government websites. (See Exhibits 2.1 and 2.2 for representative meeting notices.)

City and Rural Town Council Briefings

Periodic briefings were given to the City of Lancaster and Palmdale City Councils and to special working sessions of the Santa Clarita City Council. In addition, two series of briefings were held with many of the rural town councils for a total of 15 meetings.

Stakeholder Meetings

MTA staff and members of the project team provided update reports to the Antelope Valley Transportation Summit (a group of City and County elected officials) at each of its quarterly meetings during the project.

Additional meetings were scheduled with the Antelope Valley Board of Trade (AVBOT) and its Transportation Committee, the Valencia Industrial Association (VIA), and the Santa Clarita Chamber of Commerce. Other presentations were made to the California League of Cities – Desert Mountain Division and the Antelope Valley Forum.

Exhibit 2.1: Notice of the November 2002 Open Houses, Distributed at Littlerock and Palmdale Fall Festivals, October 2002

North County Combined Highway Corridor Study

www.mta.net

Upcoming Community Meetings

The North County Combined Highway Corridor Study is an ambitious two-part project that is looking at ways to develop realistic, affordable transportation solutions to alleviate traffic congestion and create efficient travel throughout North Los Angeles County. This Study is key to the ongoing economic vitality of the region which continues to experience tremendous growth in both population and traffic.

This Study, a multi-agency and -jurisdiction project led by the Los Angeles Metropolitan Transportation Authority (MTA), began in August last year and initially focused on I-5 and SR-14, two corridors running north-south across North Los Angeles County to the Kern County line. Work on the second part of the Study, which commenced in May 2002, will look at alternatives for the SR-138 corridor running east-west across the region to the San Bernardino County line.

MTA received initial input from the public on the Study at an Open House held in Palmdale in early summer, and is continuing to receive stakeholder feedback. During this time, the project team has conducted in-depth technical analysis and is gearing up to present an initial list of alternatives for the public at a follow-up Open House.

Please join us at a community Open House in Palmdale on November 19 to come hear about, and provide comments on, the alternatives we have developed for the I-5/SR-14 corridor, as well as hear an update on MTA's progress with work on the SR-138 corridor. Your feedback will be vital as we identify, then narrow down, the alternatives for the SR-138 for further study.

Open House

Tuesday, November 19, 2002
5-8 p.m.

Palmdale Cultural Center
Lilac Room
38350 N. Sierra Highway
Palmdale, California

For project information

Website:
http://www.mta.net/trans_planning/CPD/north_county

Brian Lin, Project Manager
MTA
One Gateway Plaza
Mail Stop 99-22-4
Los Angeles, CA 90012
Phone: (213) 922-3036
Fax: (213) 922-3022
Email: linb@mta.net

If you would like to receive project updates and newsletters, please contact:
Clarissa Filgioun
Community Outreach Specialist
Phone: (213) 381-5700
Fax: (213) 381-5857
Email: clarissa@therobertgroup.com

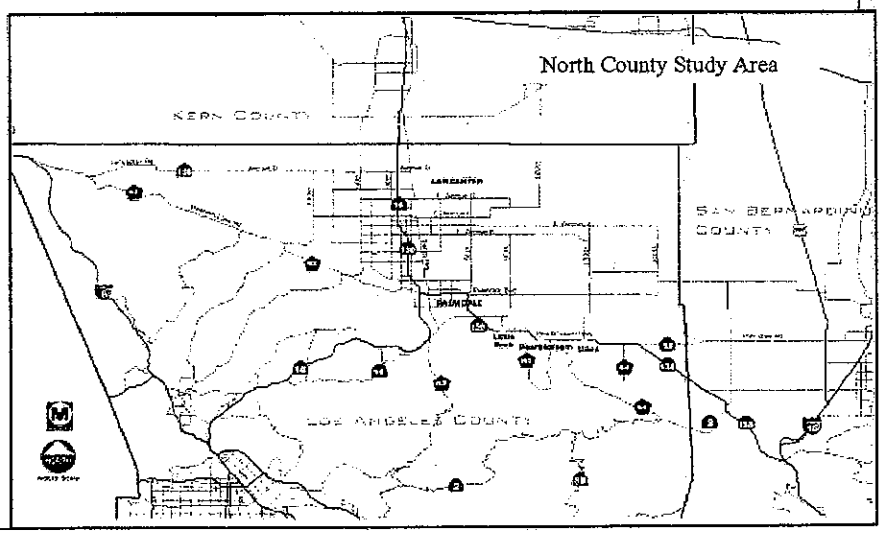
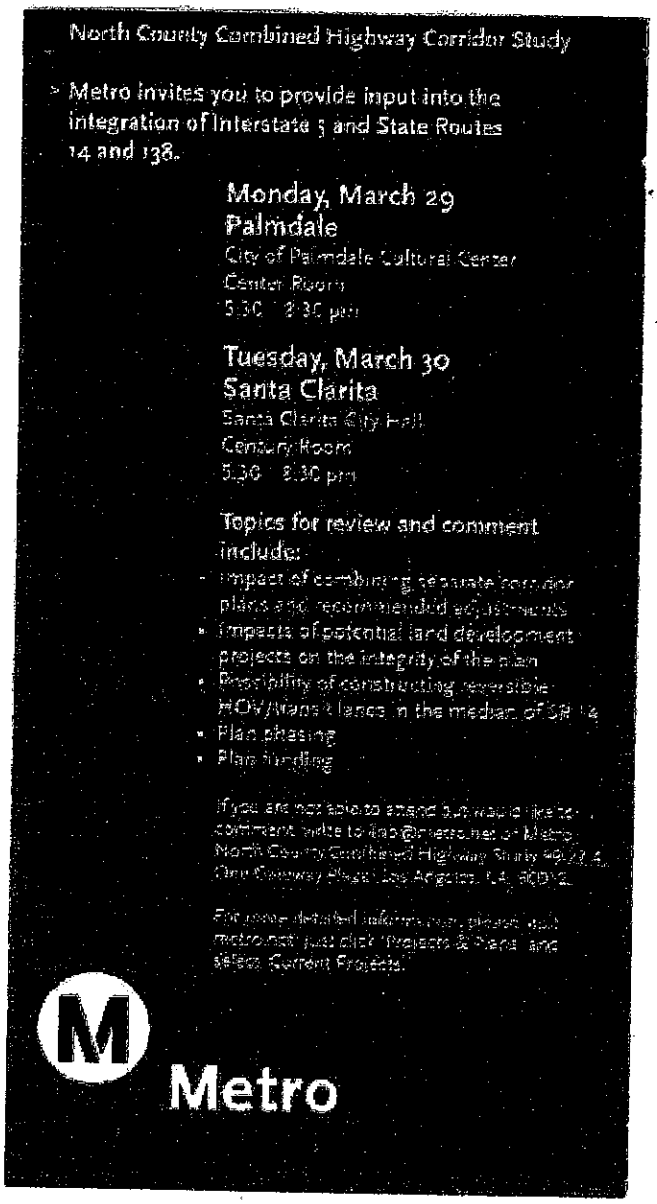


Exhibit 2.2: Notice of Final Open Houses



Additional Outreach Opportunities

To build interest in the project and attendance at public meetings and to receive input on the preliminary alternatives, the project team staffed a booth at the Palmdale Fall Festival and distributed flyers publicizing the public meetings at the Littlerock Fall Festival.

Communication Materials Development

In addition to periodic newsletters and meeting notices, a series of fact sheets, PowerPoint presentations, and project updates were developed. Up-to-date study information was also regularly posted on MTA's website.

Summary

The objective of this comprehensive, wide-ranging agency and public involvement effort was to establish consensus for the North County Corridors Plan. In addition to the ongoing technical and policy input, public comment was received and incorporated into the selection of the final integrated North County Corridors Plan. Public input received at the open houses and other briefings was also used at a project team workshop to assist in developing the initial set of conceptual alternatives. The team also responded to detailed written comments from the Lancaster Coalition of Neighborhood Organizations (LCNO) and met with the Los Angeles County Sanitation District to address their concerns about the alignment.

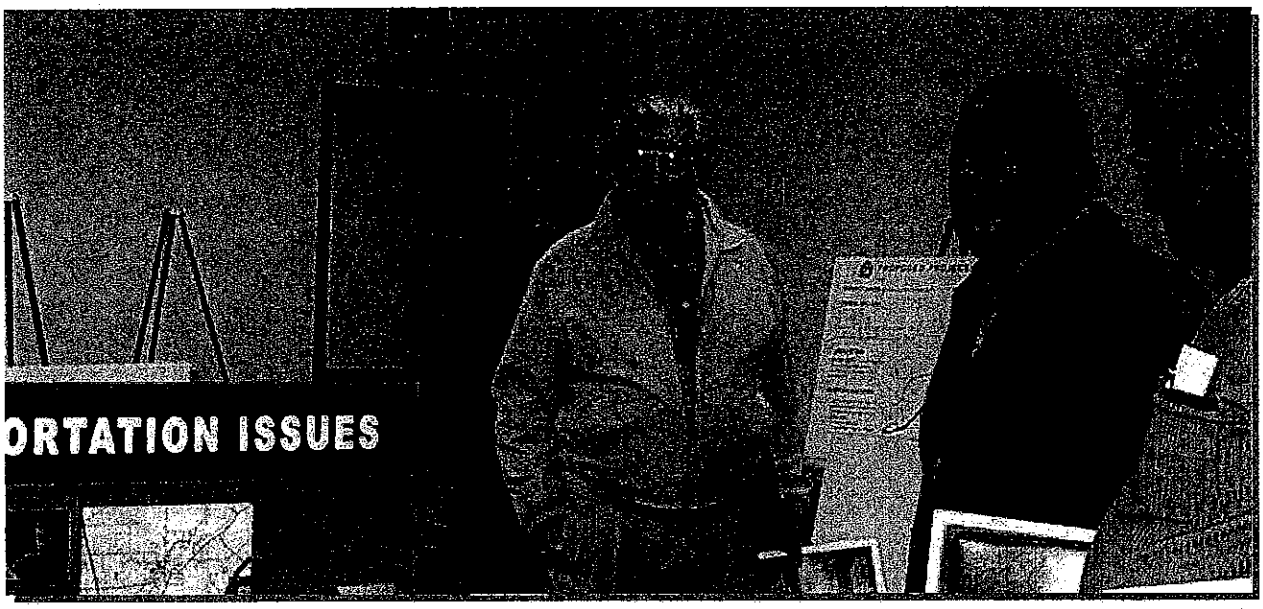
The I-5, SR-14, and SR-138 corridors serve distinct communities; for example, Antelope Valley residents were more interested in SR-14 and SR-138, while Santa Clarita stakeholders tended to focus on I-5. Summarized below are overall observations as well as specific comments from North Los Angeles County stakeholders:

- North Los Angeles County must plan now for future growth, given the long lead times required for infrastructure improvements.
- Long-term strategies must provide redundancy of systems (multimodality) and routes connecting the Santa Clarita and Antelope Valleys with other parts of Southern California.
- Strategies must consider all types of trips, and a variety of origins and destinations.
- The subregion must address critical short-term issues, including safety and congestion, with a series of practical, phased improvements to the I-5 and SR-14 corridors, and these improvements must include additional transit service to help absorb existing as well as future demand.

- Provide support for I-5 truck lanes as a solution for problems created by truck/auto conflicts in general-purpose lanes.
- I-5 stakeholders supported the need for capacity enhancements.
- Stakeholders are generally supportive of capacity enhancements on SR-14, including additional HOV lanes and reversible carpool lanes.
- There was substantial support for completing the funded and planned improvements on SR-138 in the short term.

On the whole, stakeholders are supportive of the North County Corridors Plan and are interested in exploring funding mechanisms to realize the projects. Several people want environmental justice issues addressed on the HDC alignment, and discussion took place with several Lancaster community members regarding specific alignments for the HDC north-south connectors.

The Public Outreach and Consensus-Building Process Report for the North County Corridors Plan provide detailed documentation of this effort.



CHAPTER 3: CORRIDOR CHARACTERISTICS AND TRANSPORTATION NEEDS

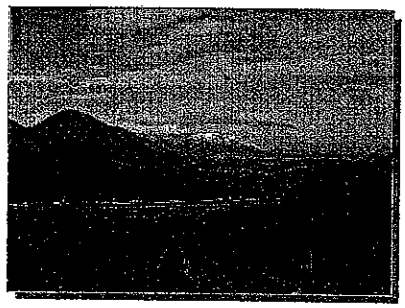
North Los Angeles County: Suburban/Pastoral Quality of Life Meets City-Style Congestion

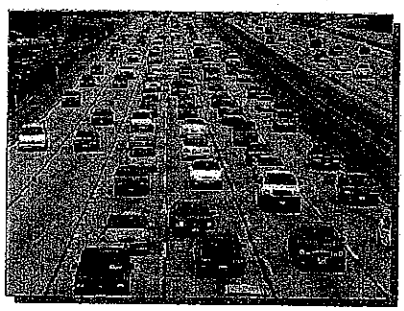
North-South Travel Needs

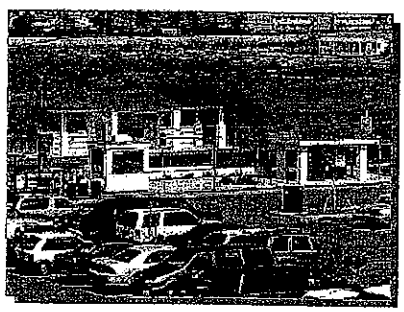
North-south connectors between the Antelope and Santa Clarita Valleys and the rest of Los Angeles County are currently limited to the I-5 and SR-14. Located north of the sprawling urbanized Los Angeles Basin and San Fernando Valley, the region provides desirable amenities and affordable housing in bedroom communities that are increasingly remote from good-paying jobs. These factors place a severe and growing congestion choke-hold on the two overloaded north-south freeways connecting jobs and houses in greater Los Angeles. The need for additional or expanded north-south corridors relates not only to extreme peak-period congestion and travel delay, but also to the need for greater system redundancy. New connections to the San Gabriel Valley, alternatives to the I-5/SR-14 interchange, and new routes through the Newhall Pass are all subjects of interest.

East-West Travel Needs

East-west connector routes between the I-5, SR-14, and I-15 are very limited. No high-level facilities currently exist that can be used conveniently by travelers to travel across the high desert or transition from one north-south route to another to reach the Los Angeles Basin from another portion of the North County Study Area. The rural, two-lane, unimproved sections of SR-138 cause travel delays and safety problems for area residents, commuters, truckers, and recreational vehicles alike. New facilities and upgraded connections are required to meet future demand and to provide for transitions between the primary north-south corridors.







Regional Mobility for Economic Vitality: Moving People and Goods

The importance of cost-effective transportation investment for the North County subregion cannot be overstated. The 2001 Regional Transportation Plan (RTP) emphasizes the interrelationship between transportation investment and performance and the economic vitality and quality of life of all subregions with the six-county Southern California Association of Governments (SCAG) region. The ability to attract jobs is important to the development goals of the localities in the high desert area, which are needed to improve regional jobs/housing balance. A robust, well-planned, minimally congested transportation system is a critical element to economic growth and vitality. Plans for the area must also help ensure that Southern California has the trucking infrastructure required to remain economically competitive at the global level.

Serving as Urban L.A.'s "Growth Safety Valve": Trends in Demographics and Travel Patterns

According to the most recent SCAG projections, previous rapid demographic growth in North Los Angeles County will continue for the long term, making the area by far the fastest growing of the nine subregions in Los Angeles County. Between 1997 and 2025, North Los Angeles County's population is projected to increase more than 149 percent from approximately 0.5 million to 1.2 million; employment is projected to increase more than 99 percent from approximately 150,300 to 299,400, and the number of household dwelling units is projected to increase more than 187 percent from approximately 153,300 to 441,000.

This staggering projected growth in population and household dwelling units, coupled with trailing increases in area jobs, defines the fundamental character and challenges of this subregion and indicates a significant need for new capacity on roadways and increased public transit services within the North County area. Adding to the trend is growth in the economies of existing and planned communities within Kern and San Bernardino counties, coupled with growth in the overall statewide economy that will create substantial increases in intercounty/ interregional trips through the area, both in trucks and general traffic.

Intercounty/Interregional Trip Making

Sizable growth is projected for the next 25 years in very long distance truck and general traffic that traverses the North County study area as intercounty/interregional trips. Growth in this category of trips will be attributable to sustained long-term growth in the Los Angeles area as well as the state's economy and development in adjacent geographic areas such as Kern and San Bernardino Counties.

Opportunity for HOV Benefits to All Corridor Travelers

An unusually high percentage of the trips on the I-5 and SR-14 in North County are long-distance trips of 25 miles or more. Trips of this length are very suitable for ridesharing if preferential lanes or facilities are available to give carpools and vanpools a significant travel time advantage over travel in the general-purpose lanes. Express bus routes can also serve this segment of travelers, reducing congestion on adjacent lanes for those who must or choose to drive alone.

Need for New Transit Connections and Services

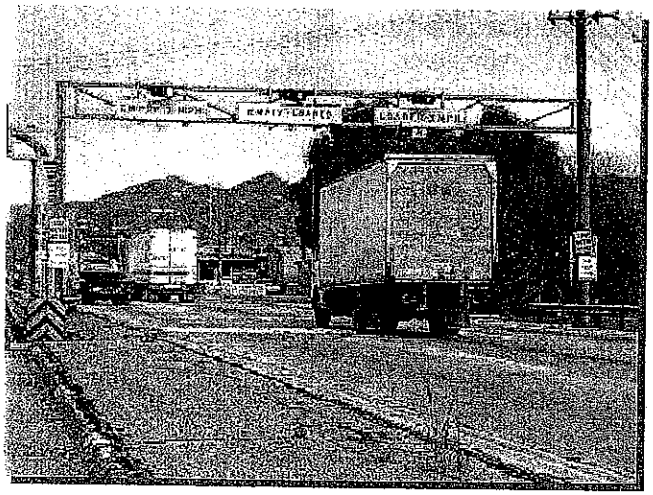
Relative to urbanized Los Angeles, transit service is underdeveloped in North County, creating mobility obstacles for autoless households and the elderly or disabled. As the study area grows, there will be parallel growth in demand for a broad variety of transit modes providing better connectivity between North County and central and western Los Angeles County. Also, the need for convenient transit connections to Kern County, Ventura County, and the Victor Valley is expected to emerge in response to increasingly complex travel patterns and higher overall demand.

Increasing Urbanization Means More Complex Trip-Making Needs

With the study area's population expected to reach approximately 1.25 million by 2025, urban development will expand substantially in the Santa Clarita and Antelope Valleys and across the high desert toward San Bernardino County and the Victor Valley. The magnitude, timing, and location of expected population growth and the continued disconnect to area jobs results in greater complexity in travel demand (multiple purposes and multiple directions) affecting the I-5, SR-14, and SR-138 highway corridors.

Palmdale Airport Access

Regional access to/from the Palmdale Airport continues to constrain the potential for Palmdale Airport's expansion to assume its planned role in the regional airport system and economic development market. Palmdale Airport has been identified as a key component in SCAG's regional airport system and will grow in importance as the study area grows in size by horizon year 2025. Both commercial passenger air service and cargo service will require reliable and high-level roadway that directly connects the airport with the region and the entire high desert area.



Growing Truck Volumes

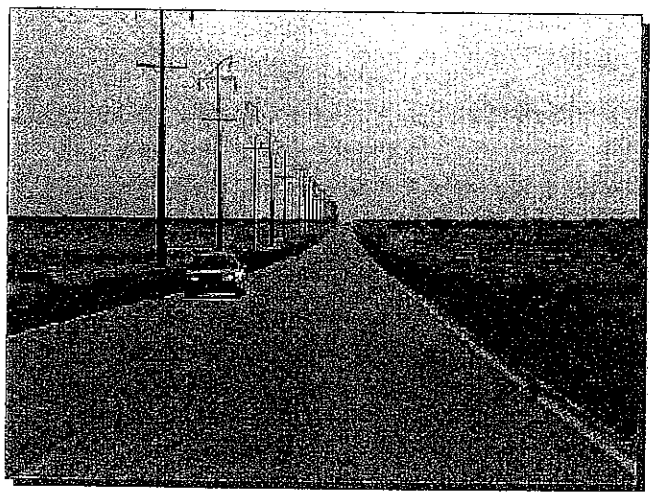
Accompanied by increasing truck traffic to Kern County and Central California, this regional economic vigor has placed pressure on North County's already underdeveloped transportation infrastructure. Although these issues are perhaps not unique to this portion of the region, they certainly have highlighted the freeway system's lack of alternatives, its vulnerability to seismic and weather events, and the general shortage of financial resources to address long-term solutions needed to meet the various transportation challenges that have been identified, including high levels of growth in truck travel. A key study goal is to maintain and, if possible, enhance truck movement on SR-138 while minimizing impacts on local communities.

Roadway-Related Characteristics and Emerging Transportation Needs

Limited Freeway Capacity Means Lost Time on I-5 and SR-14

Available roadway capacity on the I-5 and SR-14 in the North County study area is quickly being outstripped as traffic demand grows. Given the rapid growth trends for traffic in North Los Angeles County, programmed capacity improvements on I-5 and SR-14 will be overwhelmed well before the horizon year 2025.

Delay on the I-5 and SR-14 is substantial today and will grow worse in the coming years. On an average weekday, motorists traveling southbound on SR-14 corridor general-purpose lanes experience the maximum delay in the morning peak period—approximately 5,000 hours. During the evening peak period, motorists traveling northbound on I-5 typically experience the maximum delay of approximately 1,500 hours. The combined annual travel delay on both of the I-5 and SR-14 study corridors in both northbound and southbound directions is approximately 3 million hours.



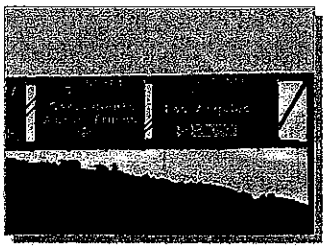
SR-138 Cannot Keep Pace with Future Demand

The number and percentage of trips that travel in and out of the high desert area will increase substantially (relative to internal trips), requiring significant improvements in roads that can serve these long-distance through trips. Without such

improvements, limited and localized congestion on SR-138 today will become far more severe by 2025 with widespread congestion during morning and evening peaks.

Interregional Traffic Contributes to Localized Congestion

North County geographically functions as a strategic gateway between the Los Angeles Basin and central and northern California. As a result, the I-5, and to a lesser extent, the SR-14 in North County must carry a substantial number of interregional traffic and truck trips. In recent years, these interregional movements have grown substantially, placing an ever-increasing strain on North County segments of I-5 and SR-14. Based on the most recent Caltrans peak period counts, the I-5 carries a very high percentage of trucks both north and south of the I-5/SR-14 interchange. Percentages range from 15 to 21 percent of total traffic south of the SR-126, with percentages as high as 44 percent north of SR-126.



Operational Complexities and Safety Challenges

Especially in the SR-138 corridor, obsolete and inadequate roadways have combined with growing traffic and truck demand to create operational conflicts between cars, trucks, and recreational vehicles, with impacts on roadway safety at specific locations. Narrow, undivided stretches of highway with few passing opportunities, multiple access locations, and irregular topography and limited sight distances all contribute to a high number of injury and fatality accidents on SR-138. Existing roadways must be made safer and new routes must be developed to the highest safety standards.

Safety on existing roadways and growing accident rates and fatalities are major issues on all corridors within the North County Study area. Accident data from Caltrans and other jurisdictions indicate that accident rates on the I-5 and SR-14 are at or above the statewide averages for freeway facilities. Long-standing safety problems on SR-138 combined with sharp increases in traffic throughout North Los Angeles County illustrate that Antelope Valley is failing to keep up with its essential transportation needs. Transportation improvements that provide immediate benefits and that meet critical needs should move forward into implementation as soon as possible.

Lack of System Redundancy

Primary study area transportation Corridors (I-5, SR-14, and SR-138) are vulnerable to shutdown because of accidents, inclement weather, earthquakes, landslides, and wildfires. To cope with emergencies, multiple facilities and alternative modes of travel are needed for the area.

Transit-Related Characteristics

Existing Public Transportation Services and Ridership

The study area contains a variety of public transit options, including fixed route and express bus services, park-and-ride lots, dial-a-ride, paratransit services, and Metrolink commuter rail. Amtrak bus service links the Antelope Valley to the rail system in Bakersfield, where the Southwest Chief line leaves for Victorville, and eastward through Las Vegas, Kansas City, and Chicago.

Transit operators in North County are aggressively expanding services and facilities to meet short-term demand, especially for north/south commuter express service. However, funded improvements are insufficient to address transit's emerging long-range role (which could be significantly greater if increased transit capacity receives priority) as a cost-effective remedy to some of the regional mobility challenges.

Expanding North County Transit's Ability to Reduce the Strain on Roadways

Extensive travel growth will overwhelm roadway capacity, requiring public transportation to carry more of the burden. A comprehensive multimodal transit framework—that is, an appropriate mix of rail and bus services—is needed to support future urban growth, provide a backup to travel by automobile, and support a lifestyle less dependent on the automobile.

North County Corridors Planning Themes

Because no one mode or element of transportation will be able to meet all of the diverse travel requirements of North County, packages of improvements were compared one against the other. These system alternatives or scenarios were taken through a rigorous process of analysis and comparison to determine which combination of improvements have the best overall benefit to North County.

Major elements of overall transportation alternatives considered were additional freeway lanes, special lanes for trucks and HOVs; bus rapid transit, high-speed rail transit, widening/realignment of roadways, and possible new highway links through the San Gabriel Mountains and another following the High Desert Corridor alignment.

The following themes, not necessarily in order of priority, emerged from scoping to guide the development and evaluation of alternatives in the North County Combined Highway Corridor Study. Because transportation funding is limited, transportation strategies reflecting these themes were structured to enhance funding prospects.

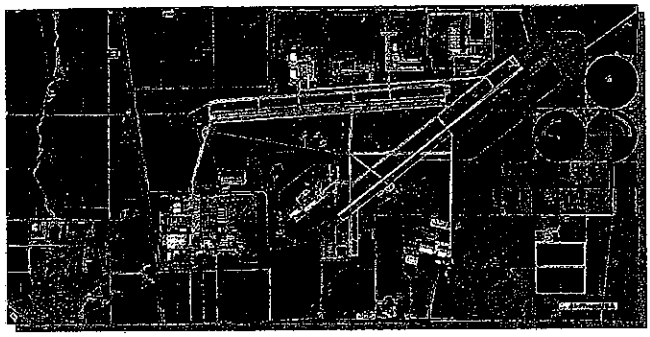
- Substantially increased vehicle capacity is needed in each of the major highway corridors. Sufficient highway right-of-way should be reserved along I-5, SR-14, and SR-138 to develop new HOV lanes and truck lanes in response to emerging demand. Many improvements, both flexible and multimodal, are needed to meet the substantial socioeconomic growth that is projected for Santa Clarita, Valencia, and the Antelope Valley communities of Palmdale and Lancaster. Available roadway capacity is quickly being outstripped, and programmed capacity improvements will be overwhelmed well before the horizon year 2025. Delay on the I-5 and SR-14 is substantial today and will grow worse in the coming years.

- A package of early action transportation improvements (highway and transit) is needed within the context of long-range planning objectives. Demand for corridor transportation improvements is great, and the public questions why solutions take so long to implement. Therefore, a comprehensive package of early action items must be developed to meet short-term needs. Consensus on a set of early action items is emerging and would be common to all long-range alternatives evaluated: continuous HOV lanes plus three mixed-flow lanes on SR-14 from Sand Canyon Road to Avenue P; extension of HOV lanes on I-5 from SR-14 to SR-126; extension of truck lanes on I-5 from SR-14 to Calgrove Boulevard; passing lanes and select pavement widening on SR-138 from Palmdale to the San Bernardino County line; and bus/Metrolink passenger service improvements to complement the HOV network.

- Safety enhancements to existing roadways are needed and new safer facilities must be built to reduce accident rates and fatalities. Widening, realignment, and traffic control along SR-138 is particularly important.

- Regional multimodal access to Palmdale Airport must be upgraded in anticipation of the Palmdale Airport's emergence as a Southern California commercial aviation hub. Palmdale Airport has long been envisioned as relief for congestion at other Los Angeles County/regional airports, especially LAX. The Palmdale Airport is also recognized as an important engine for the economic development and diversification of the Antelope Valley. Regional access to/from Palmdale Airport continues to constrain the

potential for Palmdale Airport's expansion to assume its planned role in the regional airport system and economic development market.



- A semiexclusive truck network is needed to avoid the capacity constraints and safety hazards inherent in a combined truck/auto highway system. Increased use of exclusive truck lanes, truck ramps, and climbing lanes will facilitate goods movement (important for the economic vitality of the state and region) as well as save lives. As already-high truck volumes increase, available capacity of truck lanes is limited, and traffic operations for both trucks and automobiles is adversely impacted, i.e., differences in truck and auto speeds creates friction that adversely impacts vehicle capacity and safety.
- A semiexclusive HOV/bus network is needed to avoid the capacity constraints and safety hazards inherent in combining HOV/bus operations with mixed flow traffic. A continuous and integrated HOV/bus system with dedicated HOV lanes, HOV bypasses/ ramp metering on freeway on-ramps, and priority location for HOV/express bus stops at interchanges will facilitate HOV use and provide the greatest time savings for the greatest number.
- New high-capacity east-west connector routes are needed to link I-5, SR-14, and I-15 to meet future demand and provide for movement between primary north-south corridors. The new routes would increase accessibility, shorten vehicle trips, and function as part of a metropolitan bypass for the Los Angeles region.
- Alternatives to the I-5 and SR-14 facilities are needed in order to cope with emergencies. Among other things, the feasibility of new north-south route options should be studied. I-5 and SR-14 are lifelines of statewide and regional importance. Study area transportation is vulnerable to shutdown because of accidents, inclement weather, earthquakes, and landslides.

CHAPTER 4: PART I ALTERNATIVES EVALUATION (I-5 AND SR-14 CORRIDOR PLANS)

Screening from 11 Conceptual Scenarios to a Short List of Six Feasible Alternatives

A list of 11 conceptual alternatives for I-5 and SR-14 was developed based on the results of the comprehensive scoping process conducted between October 2001 and March 2002, involving the study team, several dozen key study stakeholders, representatives from participating agencies, and the Technical Advisory Committee (TAC). Each alternative in this set was multi-modal, incorporated capital improvements and operational strategies, and was structured to show the full range of options so that the tradeoffs in costs, transportation benefits, and other impacts could be understood. These 11 multi-modal possibilities for the I-5 and SR-14 are aggregated into the following thematic scenarios:

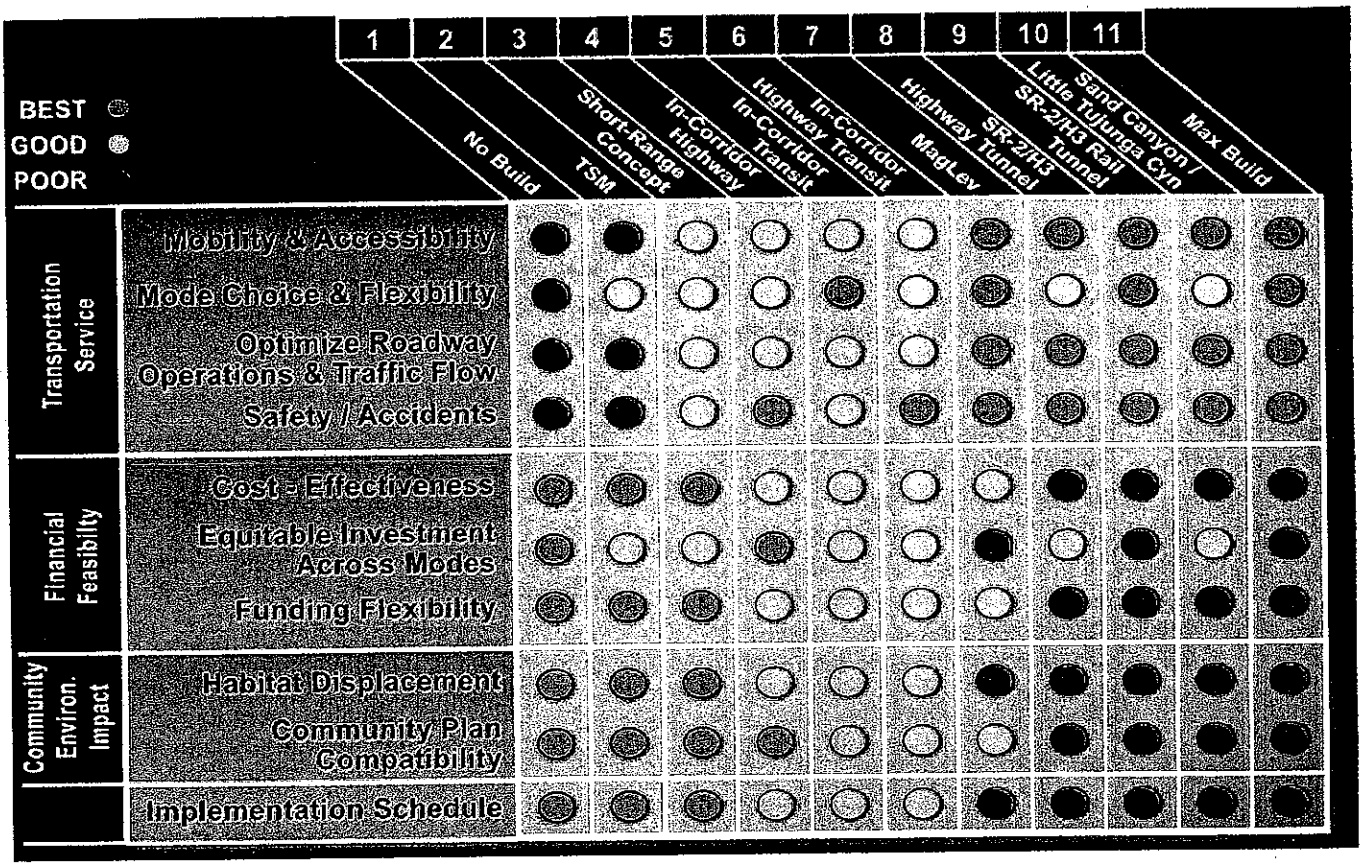
- **Alternative 1** – No Build (Existing Plus Funded)
- **Alternative 2** – Transportation Systems Management (TSM)
- **Alternative 3** – Build 1: Minimum Highway/Minimum Transit
- **Alternative 4** – Build 2: Moderate Highway/ Minimum Transit
- **Alternative 5** – Build 3: Minimum Highway/ Moderate Transit
- **Alternative 6** – Build 4: Moderate Highway/ Moderate Transit
- **Alternative 7** – Build 5: Moderate Highway/ Moderate Transit plus Maglev
- **Alternative 8** – Build 6: Moderate Highway/ Moderate Transit plus New N-3/SR-2 Mountain Route
- **Alternative 9** – Build 7: Moderate Highway/ Moderate Transit plus New N-3/SR-2 Rail Route
- **Alternative 10** – Build 8: Moderate Highway/Moderate Transit plus Sand Canyon/Little Tujunga Canyon Mountain Route
- **Alternative 11** – Build #9: Maximum Highway/Maximum Transit

As Exhibit 4.1 shows, the initial screening criteria represented a variety of performance indicators in one of four categories:

- Transportation Service
- Financial Feasibility
- Community and Environmental Impacts
- Ease of Implementation

The analysis that aided the TAC in selecting the short list was order of magnitude, and allowed the identification of alternatives that were most likely and least likely to perform well in more detailed and comprehensive evaluations. The three build alternatives recommended to be carried forward—3, 5, and 6—appeared to provide a good balance of corridor carrying capacity, financially affordability, environmental compatibility, and implementability. Alternative 4 was withdrawn from further consideration due to its similarity to Alternative 6. Also, the evaluation of alternatives 5 and 6 in combination was deemed to be more important than the evaluation of Alternative 4. Alternatives 7-11 were withdrawn from consideration due to high costs, environmental impacts, and implementation difficulties.

Exhibit 4.1: Initial Screening Matrix of Alternatives



Several additional alignments through the San Gabriel Mountains were identified during public review. However, these new mountain routes were rejected due to high costs and environmental impacts.

Six Short List Alternatives Selected

Based on screening criteria approved by the TAC, the initial list of alternatives was reduced to a short list of alternatives for evaluation, including a No-Build, Transportation Systems Management (TSM) and three build alternatives. As Exhibit 4.1 shows, the selected criteria and concept-level ranking of the initial alternatives resulted in the following short list, described in more detail in Exhibit 4.2:

- **Alternative 1** (No-Build)
- **Alternative 2** (TSM)
- **Alternative 3** (Minimum Highway/Minimum Transit)
- **Alternative 5** (Minimum Highway/Moderate Transit)
- **Alternative 6** (Moderate Highway/Moderate Transit, also known as the Ultimate TCR)

Exhibit 4.2: Overview of North County Part I Short-Listed Project Alternatives

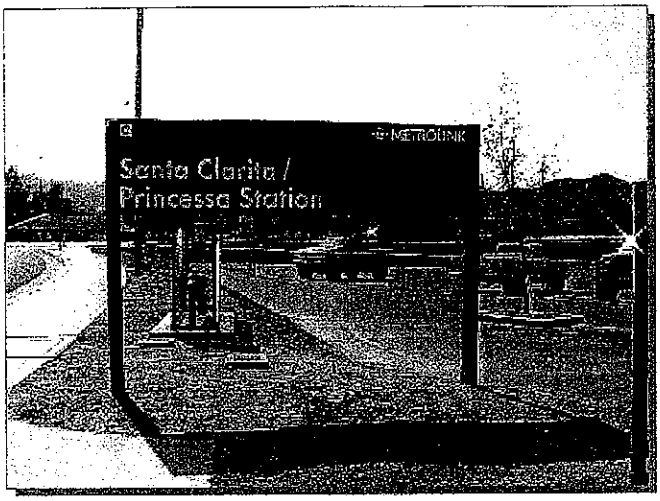
- **Alternatives 1 and 2**, No Build and TSM, are required to be advanced for baseline comparison. The TSM alternative adds 12 new Metrolink commuter rail cars and 29 new southbound express bus departures over No-Build, but does not add highway capacity.
- **Alternative 3** is the first of the build alternatives proposed to be advanced. It embodies minimum investment, with an apparent balance between highway and transit. Along I-5, one new HOV lane would be added between SR-14 and SR-126 and a new truck lane would be added from SR-14 to Calgrove Ave. Along SR-14, a continuous section of 3 general-purpose lanes plus an HOV lane would be completed in each direction from I-5 to Avenue P. This alternative would add 32 express bus runs and 2 Metrolink commuter trains, with an additional 17 cars, to the southbound AM commute beyond those provided in the TSM alternative.
- **Alternative 5** builds on Alternative 3 with a substantial increase in transit investment. This alternative would provide the same highway improvements as Alternative 3, and add 35 southbound express bus runs and 4 Metrolink trains, with an additional 19 cars in the AM commute beyond improvements provided in Alternative 3.
- **Alternative 6** builds on Alternative 5, adding substantial highway investment. Along I-5, 1 new general-purpose lane would be added from SR-14 to the Kern County line, 1 new HOV lane would be added from SR-14 to north of SR-126 West, and the truck lane would be extended north to SR-126 East and become a climbing lane as required north to the Kern County line. Along SR-14, 1 general-purpose lane would be added from Sand Canyon to Avenue D, 1 HOV lane would be added from I-5 to Avenue L, and a truck lane would be added from I-5 to Sand Canyon. This alternative would have the same transit investment as Alternative 5.
- In addition to selecting these alternatives for further evaluation, the TAC directed the North County team to perform sensitivity testing of Alternative 6 + High-Speed Rail, which adds a technology-neutral high-speed rail component to the Moderate Highway/Moderate Transit scenario in Alternative 6.

I-5 Corridor Alternatives Evaluation

Early in the study, the TAC and the North County Transportation Coalition identified HOV lanes between SR-14 and SR-126 West and truck lanes from SR-14 to Calgrove as the highest priority for early implementation in the I-5 Corridor. Early action recommendations were based on a review of current congestion and safety issues, consistency with regional travel forecasts, and stakeholder input.

Long-range planning for the I-5 Corridor began with a horizon year 2025 corridor travel forecast that more than doubled the current travel volume. An initial investigation of the I-5 Corridor alternatives was conducted at six cutlines (designated 5A through 5F) from just north of the I-5/SR-14 interchange on the south to the Kern County line in the north. Cutline 5A, a short I-5 segment just north of the I-5/SR-14 interchange, was deemed a key location for assessing future I-5 Corridor travel needs. The three build alternatives provided the following new roadway and transit facilities and services at cutline 5A:

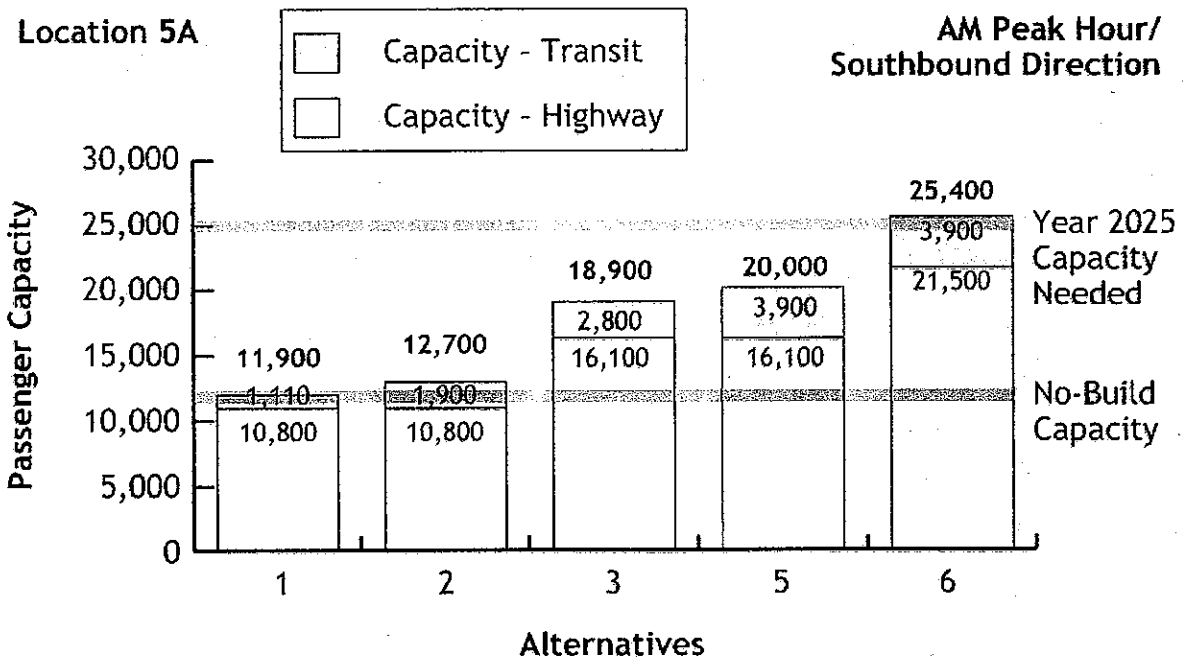
- Just north of the interchange, build Alternatives 3 and 5 would provide two new traffic lanes (an HOV and a truck lane), an increase of about 50 percent over existing capacity. Alternative 6 would provide four new lanes (two HOVs, a truck lane, and a general-purpose lane), roughly doubling existing freeway capacity.
- Metrolink and express bus services would be increased at this location. Peak hour transit service would be increased by almost 100 percent over existing services in Alternative 3 and by 200 percent over existing levels in Alternatives 5 and 6.
- Park-and-ride lot spaces would be increased by about 100 percent over existing capacity in Alternatives 5 and 6.



Highway and Transit Demand and Capacity Compared

- With current I-5 roadway capacity, congestion occurs southbound in the morning peak period and northbound in the evening peak period, when traffic volume is at capacity. In 2025 with no new lanes, traffic conditions would degrade substantially. Alternatives 3 and 5 would improve conditions by adding capacity. Alternative 6 roughly doubles highway capacity, approaching long-range travel forecasts for the peak hour. Exhibit 4.3 shows I-5 capacity, by alternative, for the roadway segment from SR-14 to Calgrove Blvd.

Exhibit 4.3: Highway and Transit Person Carrying Capacity on I-5 North of SR-14



Note: Assumes average vehicle occupancy of 1.345 persons per vehicle

Exhibit 4.3 shows that at location 5A (I-5 from SR-14 interchange to Calgrove Blvd.) the passenger capacity needed to meet year 2025 demand is 26,000. Alternatives 1 and 2 have 11,900 and 12,700. Alternatives 3 and 5 have 18,900 and 20,000 passenger capacity while Alternative 6 has 25,400.

- Transit demand in the I-5 Corridor is expected to increase in response to residential and job growth. In response to new demand, transit service would double in Alternative 2, triple in Alternative 3, and quadruple in Alternatives 5 and 6. Notwithstanding any increase, the dominance of the highway mode along the I-5 Corridor is expected to continue. Transit's share in the peak hour will approach 10 percent in Alternative 6 for horizon year 2025.

Trucks and Goods Movement

The high truck volumes in the I-5 Corridor forecasts, and safety issues inherent in mixing large volumes of trucks and autos, suggest that two truck lanes might be physically separated from the mainline roadway in each direction. Trucks would travel in a semi-exclusive I-5 truckway, bypassing the interchanges and accessing the mainline roadway on longer segments between interchanges. Extending the separate truck lanes north from the I-5/SR-14 interchange would eliminate the need for automobiles to weave across truck traffic at on and off ramps, thereby increasing traffic safety and improving freeway operations.

Capital Costs

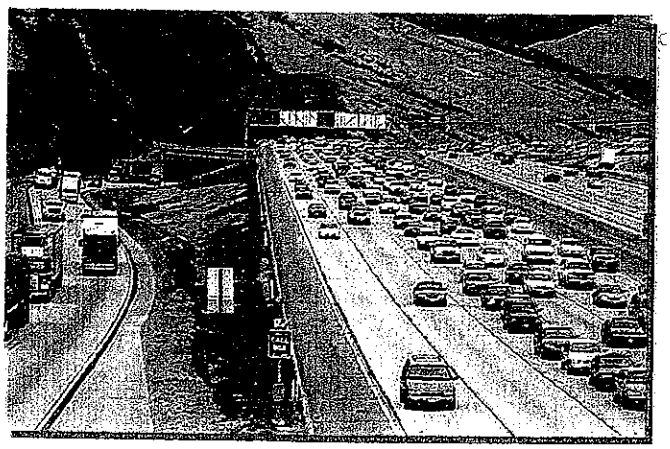
Estimated capital costs of alternatives on I-5 range between $15 million for Alternative 2 and $700 million for Alternative 6. Most of the cost is for highway improvements. Each lane of new highway serving the built-up area between SR-14 and SR-126 will cost about $90 million.

Environmental Impacts

Several significant environmental resources could be affected by highway improvements: parks, historic sites, streams, and habitat areas. Most of the right-of-way needed for future improvements in the I-5 Corridor has been acquired, and retaining walls are envisioned to limit encroachment on residences, businesses, and habitat outside the right-of-way. Extensive noise wall construction will be needed in some areas. There would be potential and indirect impacts in the area south of the I-5 and SR-14 interchange due to desired continuity of freeway widening.

Looking Past the Bottleneck

One important finding from the highway analysis was that new traffic lanes north of the I-5/SR-14 interchange must be coordinated with the construction of highway improvements through the interchange and south to I-210 and I-405. Providing continuity through the interchange would require new general-purpose, HOV, and truck lanes south through the interchange to match improvements to the north. Phased construction of new lanes south of the interchange will require further consideration. (See Chapter 7 for integration analysis results.)



SR-14 Corridor Alternatives Evaluation

In early 2002, the TAC and NCTC identified as the top priority for early action in the SR-14 Corridor one continuous HOV lane and three general-purpose lanes in each direction from I-5 to Avenue P. Early action recommendations were outlined in an application submitted for MTA's March 2003 Call for Projects.

Long-range SR-14 corridor planning began with year 2025 travel forecasts. Travel within the corridor was forecast to nearly triple over current travel volumes. An initial investigation of the SR-14-Corridor was conducted at six cutlines (designated 14A through 14F) from just north the I-5/SR-14 interchange at the southern end of the corridor to the Kern County line in the north.

A key location for assessing future SR-14 Corridor needs is just north of the I-5/SR-14 interchange.

The attributes of alternatives at this location are:

- Alternatives 2, 3, and 5 would provide no new traffic lanes at this location. However, a single mixed-flow lane would be added upstream, between Sand Canyon and Avenue P for a nearly 30 percent increase in freeway capacity. Alternative 6 would provide two new lanes at this location (a second HOV and a truck lane), for a nearly 50 percent increase in existing freeway capacity.
- Peak hour transit service on the SR-14 would be nearly tripled with Alternative 3 and increased nearly four-fold over the No-Build, with Alternatives 5 and 6.
- Park-and-ride lot spaces would be increased 50 percent with Alternative 3 and almost doubled with Alternative 6.

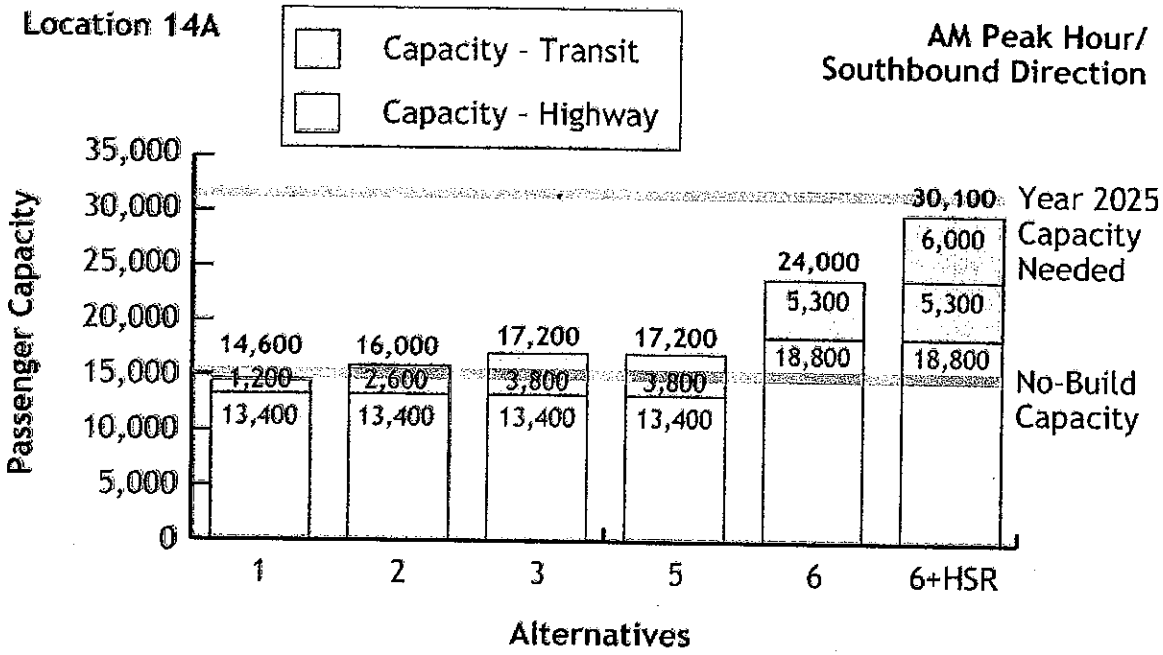
Highway and Transit Demand and Capacity Compared

With current SR-14 highway capacity, congestion occurs southbound in the morning peak period and northbound in the evening peak period, when traffic volume is at capacity. In 2025, with no new lanes, traffic conditions would degrade substantially. Alternative 6 would improve conditions compared to the No-Build alternative, with two new lanes.

Transit capacity in the SR-14 Corridor must be expanded in response to Antelope Valley growth. Transit service would double with Alternative 2, almost triple with Alternative 3, and quadruple with Alternatives 5 and 6. Implementation of high-speed rail with a station in Palmdale could add an additional 6,000 passengers in the peak hour. Alternative 6 + HSR would increase transit capacity eight-fold. Exhibit 4.4 shows highway plus transit capacity, by alternative, at the location on SR-14 just north of the I-5/SR-14 interchange.

Implementing a California High-Speed Rail Initiative routed through Palmdale/Lancaster affords the opportunity to raise Antelope Valley transit accessibility to an entirely new level. This 700-mile statewide system, which will go to the voters for approval, provides for 180-mph trains linking northern and southern California cities. Although a route through the North County has not been selected, a strong demand-based argument can be made for the route through Palmdale. This alignment provides access to a sizable commuter market in addition to serving longer-distance intercity ridership.

Exhibit 4.4: Highway and Transit Person Capacity on SR-14 North of I-5



Note: Assumes average vehicle occupancy of 1.345 persons per vehicle

Exhibit 4.4 shows that the total passenger capacity in the AM peak hour southbound for year 2025 is 33,000 on SR-14 just north of I-5. Alternatives 1 and 2 have 14,600 and 16,000 passenger capacity. Alternatives 3 and 5 have the same capacity, 17,200, while Alternative 6 is 25,400.

Directional Traffic Points to Possible Benefits of Reversible HOV Lanes

- The peak period commute along the SR-14 Corridor is very directional, with 70 percent of travel southbound in the morning and northbound the evening; travel in the off-peak direction comprises less than 30 percent of overall traffic volumes. Thus, the SR-14 Corridor offers a unique opportunity for implementing reversible HOV lanes. Typical HOV lanes operate in lanes adjacent to and outside the general-purpose lanes. An alternative would provide two reversible HOV lanes operating in a median roadway separated from the mainline by concrete barriers. Access to the median "chute" would be controlled with gates similar to those used to protect railroad crossings. The I-15 Managed Lanes, north of San Diego and the Caldecott Tunnel in the Bay Area, operate in a similar manner.
- The pavement width and right-of-way required for two reversible lanes would be considerably less than that required for a conventional HOV configuration. A four-reversible-lane configuration requires the same pavement width and right-of-way as a conventional HOV configuration with 2 lanes in each direction, but its more flexible operation offers more peak direction capacity. See Chapter 7 for the integration analysis of the reversible HOV lane concept.
- A variation of the reversible-lane configuration would be to increase the number of reversible lanes inside the reversible median roadway and market a portion of the excess capacity to single occupant vehicle drivers willing to pay to bypass congestion in the general-purpose lanes. This variation of the reversible HOV/Managed Lanes concept is now used along I-15 north of San Diego, where revenue generated from solo drivers paying to use the

HOV lanes finances new transit service in the same corridor.

Capital Costs

Estimated capital costs of SR-14 Corridor alternatives range between $50 million for Alternative 2 and $1.2 billion for Alternative 6. Most of the cost is for highway improvements. Each lane of new highway serving the corridor between I-5 and Avenue P will cost about $350 million. For additional comparison, an Alternative 6+ including Alternative 6 highway and transit improvements plus High-Speed Transit is estimated to cost $2.7 billion.

Environmental Impacts

Several significant environmental resources could be affected by highway improvements: Angeles National Forest, parks, historic sites, creeks, and habitat. Most of the right-of-way needed for future improvements in the SR-14 Corridor has been acquired, and retaining walls are envisioned to limit encroachment on residences, businesses, and habitat outside the right-of-way. Noise wall construction will be needed in some areas. Again, there would be potential indirect impact south of the I-5 and SR-14 interchange due to desired continuity of freeway widening.

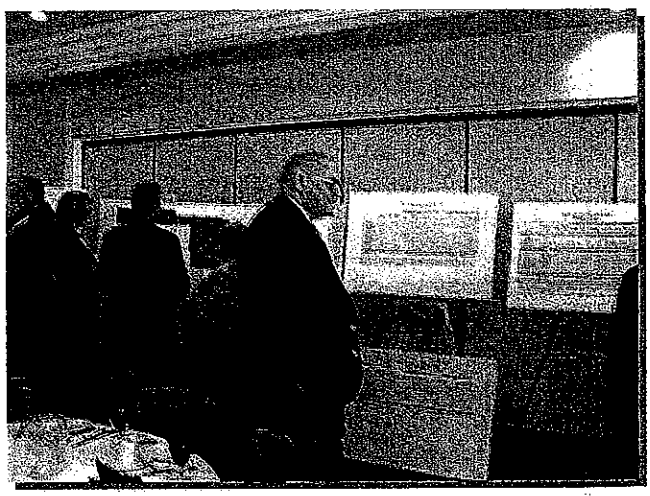
Part I Locally Preferred Strategy Selection Process

Based on the Study, the TAC selected Part I short-and long-term Locally Preferred Strategies in 2003. However, it was understood that the strategies identified (Alternatives 3 and 6, for the short- and long-term strategies, respectively) might be modified when Parts I and II of the North County Study were integrated in the spring of 2004. This section tracks the Part I corridor-specific evaluation that led to the selection of Alternatives 3 and 6, and concludes by showing the final short- and long-term alternatives for the I-5 and SR-14 Corridors, as modified by the integration process. Definitions of the modified locally preferred strategies appear in Chapter 6, Locally Preferred Strategy Definitions. Details of the integration analysis appear in Chapter 7, North County Corridors Plan.

Part I Short-Range Corridor Strategy Selection Rationale

The selected I-5 and SR-14 Short-Range Corridor Strategy (Alternative 3, with modifications, as defined in Chapter 6) was based on the statement of purpose and need adopted by the TAC and NCTC in early 2002. That statement specified the advancement of a package of high-priority improvements for early action.

1. **Accommodation of Forecast 2010 Travel**—Target improvements alleviate congestion envisioned by 2010 travel forecasts.
2. **Consistency with Long-Range Corridor Strategies**—Short-range roadway widening would not be undone by future improvements.
3. **Special Consideration/Priority for Safety**—Target extension of truck lanes on I-5 from SR-14 to Calgrove Avenue and uniform/consistent roadway section along SR-14 from Sand Canyon to Avenue P to reduce accident rates.
4. **Focus on Transit and Carpool (HOV) Improvements** for greatest cost-effectiveness in accommodating peak hour, peak direction person travel.



Part I Long-Range Corridor Strategy Selection Rationale

The selected I-5 and SR-14 Long-Range Corridor Strategy (Alternative 6, with modifications, as

defined in Chapter 6) was based on the statement of purpose and need adopted by the TAC and NCTC in early 2002 and the two-tiered Corridor Alternatives Analysis, which was described earlier. Several findings played a key role in identifying the recommended strategies:

1. **Accommodation of Forecast 2025 Travel**—Doubling of person travel is forecast in the I-5 Corridor and tripling of travel is forecast in the SR-14 Corridor.

2. **Maximum Reliance on Transit and Carpooling to Relieve Peak Hour, Peak Direction Traffic Congestion**—Cost-effectiveness analysis shows will be less expensive to accommodate peak hour, peak direction person travel via transit and carpooling than with additional general-purpose highway capacity. Unfortunately, there are limits to the attractiveness of transit and carpooling (competitive travel time, need a vehicle for work, etc.), and it will not be cost-effective to accommodate peak hour travel demand via transit/carpooling for an incremental cost of more than $3 per incremental person trip in the I-5 Corridor and $6 per incremental person trip for the SR-14 Corridor.

3. **Avoidance of Significant Environmental Constraints**—Alternatives through the San Gabriel Mountains and other options encroaching on valued habitat were eliminated from consideration, in part to avoid protracted and contentious project development, and in part to select options that could be phased in incrementally. Large projects that take many years to complete do not produce inordinate political support and willingness to defer benefit.

4. **Special Consideration/Priority for Trucks/Goods Movement, Important to the Economic Vitality of the Region**—Designated truck lanes should be developed because separating truck traffic from general-purpose lanes can accelerate the delivery of goods and services and reduce accident costs.

5. **Incorporation of High-Speed Rail** through the Antelope Valley is envisioned as an important augmentation to the corridor. With the advancement of the California High-Speed Rail Project, and SCAG's Palmdale to LAX Maglev Project, there is an excellent opportunity to piggyback urban commuter service on high-speed intercity transit service, thereby achieving more cost-effective public transportation for both travel markets.

North County Study Findings Presented to Antelope Valley Board of Trade in March 2004

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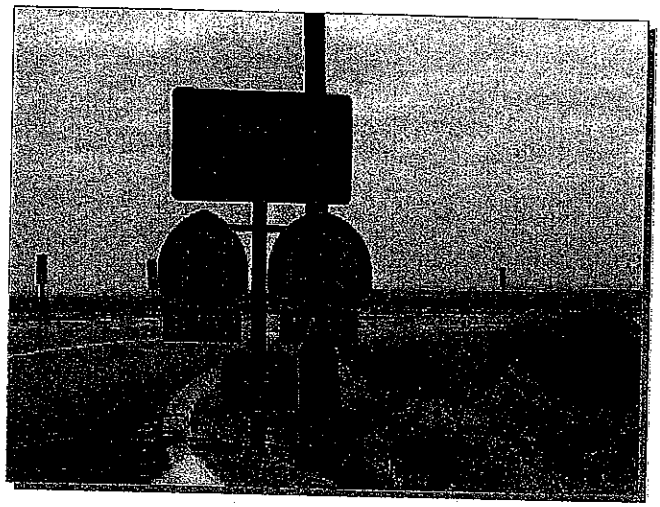
CHAPTER 5: PART II ALTERNATIVES EVALUATION (SR-138 CORRIDOR PLAN)

Screening from Eight Conceptual Scenarios to a Short List of Four Feasible Alternatives

An initial set of broad conceptual alternatives for the SR-138 Study was developed during an Alternatives Development Workshop with the SR-138 Technical Advisory Committee (TAC) conducted on November 4, 2002. The long list of alternatives was the result of a comprehensive scoping process conducted between May and December 2002 and included the study team, several dozen key study stakeholders, representatives from participating agencies, and the TAC. Each of the initial eight alternatives was designed to address the identified needs and objectives of the study area and to provide the basis for meaningful comparison among discrete components and logical sets of strategies. The initial set of alternatives are presented below:

Conceptual Set of Alternatives

- **Alternative 1:** No Build (includes only funded and committed transportation projects to 2025)
- **Alternative 2:** Enhanced Transportation Systems Management (TSM)
- **Alternative 3:** Low Build—Regional Arterials
- **Alternative 4:** Medium Build—4-Lane Expressway/Business Loop Bypass
- **Alternative 5:** High Build Alternative—High Desert Corridor
- **Alternative 6:** High Build Alternative—High Desert Corridor Modified
- **Alternative 7:** High Build Alternative—High Desert Corridor with Rail
- **Alternative 8:** Very High Build Alternative—Enhanced High Desert Corridor with HOV



Screening of Conceptual Set of Alternatives

The screening criteria used to assess the initial set of eight conceptual alternatives was developed from the project Purpose and Need statement and was applied to each conceptual alternative to determine whether it, or elements of it, satisfied study objectives. In a March 2003 all-day workshop, the TAC rated and ultimately ranked these alternatives. Exhibit 5.1 shows the results of the TAC alternatives screening workshop. Note that the No Build Alternative (Alternative 1) and the Enhanced TSM Alternative (Alternative 2) are needed to provide an ongoing basis of comparison to the selected build alternatives throughout all stages of the study. TAC scrutiny was directed to the six build alternatives. A numerical scoring of the alternatives (detailed in Chapter 4 of the Alternatives Development and Screening Report) was then color-coded for presentation to the public as shown in Exhibit 5.1.

Exhibit 5.1: Initial Screening of Alternatives

Ranking of Alternatives	Alt. 1	Alt. 2		Alt. 4		Alt. 6		
Cost	○	○		○		○		
Travel Benefits	●	●		○		○		
Regional Connectivity	●	●		○		○		
Safety	●	●		○		○		
ROW Impact	○	○		○		○		
Environmental Concerns	○	○		○		○		
Public/Community Support	●	○		○		○		
Financial Viability	○	○		○		○		
Transit	●	○		○		○		
Total	●	○		○		○		

○ Good ○ Fair ● Poor

Alternatives 4 and 6 were selected for further analysis. These became Alternatives C and D, respectively, in the Final Set of Alternatives, and, along with the required No Build (Alternative A) and Enhanced TSM (Alternative B) alternatives, were carried forward into the next phase of more detailed analysis and assessment.

Four Short-List Alternatives Selected

The four alternatives carried forward provide a range of transportation service, varying from no improvements to a six-fold increase in highway and transit capacity. More expensive, less efficient, and more environmentally intrusive options such as an extensive system of eight-lane arterial streets were eliminated from further consideration during this initial screening process.

Alternative A: No-Build

This alternative consists of existing and funded (but not yet constructed) projects. Included are HOV lanes on SR-14 north to Avenue P-8 and widening portions of SR-138 to four lanes. The alternative also includes completion of the Palmdale Multi-modal Transportation Center and a 50 percent increase in local bus service over current (2003) levels.

Alternative B: Enhanced Transportation System Management (TSM)

Alternative B includes everything in the No-Build Alternative, plus the balance of unfunded (approximately $80 million) SR-138 widening improvements. This alternative also includes introduction of express bus service between the Antelope and Victor Valleys.

Alternative C: 4-Lane Expressway/Business Loop Bypass

Alternative C includes Alternative B plus the following:

- Four-lane east-west expressway between SR-14 and I-15 along an alignment previously identified for a High Desert Corridor (HDC);
- Four-lane north-south expressway parallel and east of SR-14 between Avenue D and SR-138
- A four-lane expressway bypass around the communities of Littlerock and Pearblossom